UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 09/762,739 | 06/19/2001 | Karl Kammerlander | 112740-167 | 8564 |

29177 7590 06/24/2005

BELL, BOYD & LLOYD, LLC
P. O. BOX 1135
CHICAGO, IL 60690-1135

| EXAMINER | |
|---|---|
| D AGOSTA, STEPHEN M | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2683 | |

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/762,739 | KAMMERLANDER ET AL. | |
| | Examiner | Art Unit | |
| | Stephen M. D'Agosta | 2683 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *7-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments filed 6-10-2005 have been fully considered but they are not persuasive.

1. The primary examiner has further searched the amended claims and continues to put forth the prior art of record as reading on the claims.

2. The applicant argues that Hamada teaches using two out of four slots and that certain slots are change which does not on their art. The examiner disagrees – firstly he notes that independent claim 7 is written in a very broad fashion and is thus open to very broad interpretation. Therefore this broad claim does not rule out what a "channel" can be (eg. one slot or more than one slot). The applicant's specification allows for a "channel" to be a slot, frequency, code or slot/frequency (pg 1, L5 to pg 2, L2). Therefore, Hamada's teachings of more than one timeslot being used does not overcome the examiner's rejection. One skilled can construe/interpret a "channel" as being one (or more) timeslots/frequencies/codes depending upon how much bandwidth a user is to be allocated (eg. similar to QoS which can adapt the user's bandwidth in realtime).

3. The applicant argues that Shepard and Hamalainen do not rememdy Hamada's shortcomings. The examiner disagrees. Shepard teaches that allocated timeslots can be asymmetrically reallocated in a uni-direction (abstract) which puts forth the high level concept that a "channel" is not a locked uplink/downlink pair (such as that of the applicant). Hence, the primary examiner uses Shepard to fix Hamada's teaching of a channel being a somewhat "locked" pair.

4. Hamalainen furthers the primary examiner's rejection since he teaches determining troubled timeslots and changing said timeslots to other timeslots. This again reads ont eh applicant's independent claim since it is written broadly.

5. The applicant's previous arguments appear to use knowledge of their specification rather that stating facts from their claim(s). Claim 7 simply states that a troubled first/second channel will be changed to a different channel – there is no definition as to what a channel is or how it can/cannot be defined. The examiner offers the applicant an opportunity to amend their claim(s) in a more narrow fashion to separate themselves from the prior art of record.

6. After further review, the primary examiner believes a more favorable outcome may occur if the applicant were to amend as follows:

a. Claim 7 + claim 8 + claim 12 (TDMA)
b. Claim 7 + claim 9 + claim 12 (FDMA)
c. Claim 7 + claim 10 + claim 12 (TDMA/FDMA)
d. Claim 7 + claim 11 + claim 12 (CDMA)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

**Claims 7-10 and 12** rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada EP0895437A and further in view of Sheperd et al. EP0399612A2 and Hamalainen WO-9859441.

As per **claim 7**, Hamada teaches a method for changing radio channels in a mobile system comprising:

Providing an existing duplex radio link having both a first physical radio channel for transmitting information via an air interface and a second physical channel for transmitting information in an opposite direction to the first physical channel via the air interface

Changing, upon a disturbance of the duplex radio link (abstract and figures 1,6 and 9 [see #901, #903, #904, #905 where slots are changed] and figure 17 and C3, L47 to C4, L3 and C5, L54 to C6, L51 and C8, L5-35 and C9, L45 to C11, L11 and C12, L9-18, L41-47 and C13, L26 to C14, L1 and C15, L46-53 and C16, L22-57 and C17, L20-47)

**But is silent on** only the disturbed one of the first physical channel and the second physical radio channel wherein the undisturbed one of the first channel and second channel is retained.

**Sheperd** teaches reassignment of a single duplex channel/slot (and not both as is taught by Hamada – C6, L9 to C7, L14). It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Hamada, such that reassignment of a single duple channel/slot is allowed, to

provide means sending data in one direction only if required (and/or a lot of data in one direction and only a little in the other).

**Hamalainen** teaches transmit/receive in different/separate TDMA frames which can be changed in one direction (eg. transmit) without affecting the other (eg. receive) [abstract and figure 2]. Hence, it would have been obvious to one skilled in the art at the time of the invention to modify Hamada in view of Sheperd, such that only the disturbed channel is changed leaving the new and undisturbed channels being retained, to provide means for only changing the channel which is being disturbed which reduces the need to handoff and allows continued communications (eg. in one direction).

As per **claim 8**, Hamada teachs claim 7 wherein the mobile system exhibits a TDMA component (C3, 47-55) in which only a time slot of the disturbed one of the first physical channel and the second physical radio channel is changed (see figures 6 and 17).

As per **claim 9**, Hamada teaches claim 7 wherein the radio system exhibits an FDMA multiple access component in which both a time slot and a carrier frequency of the disturbed one of the first and second physical radio channel is changed (figure 8 teaches changing carrier, #804, #806).

As per **claim 10**, Hamada teaches claim 7 wherein the radio system exhibits both a TDMA multiple access and an FDMA multiple access component in which both a time slot and a carrier frequency of the disturbed one of the first and second physical radio channel is changed (figure 8 teaches changing carrier, #804, #806 while figure 9 teaches changing timeslots #903, #905).

As per **claim 12**, Hamada teaches claim 7 wherein each available radio channel of the mobile system can be used both as a first channel and as a second channel (figures 6 and 17 show that channels can be assigned in any way).

**Claim 11** rejected under 35 U.S.C. 103(a) as being unpatentable over Hamada in view of Sheperd and Hamalainen and further in view of Gitlin et al. US 6,018,528.

As per **claim 11**, the combination of Hamada in view of Sheperd and Hamalainen teaches claim 7 **but is silent on** wherein the radio system exhibits a CDMA multiple access component in which the transmission code of the disturbed one of the first and second physical radio channel is changed (figure 8 teaches changing carrier, #804, #806 while figure 9 teaches changing timeslots #903, #905).

While CDMA is known in the art and would key off "transmission code", the examiner puts forth **Gitlin** who teaches optimization of spectral efficiency (eg. can allocate more/less bandwidth as needed) that supports time, frequency and CDMA systems (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify the combination of Hamada, Sheperd and Hamalainen, such that CDMA is supported, to provide means for the invention to interoperate on highly utilized nationwide/worldwide cellular systems today.

## *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 571-272-7872. The fax

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta
Primary Examiner
6-20-2005